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|---|-------------|----------------------|-----------------------------------|
| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.               |
| 09/451,666  | 11/30/99    | ITO                  | T 07898-051001                    |
| <input type="checkbox"/> 020985   |             | HM12/0110            | <input type="checkbox"/> EXAMINER |
| FISH & RICHARDSON, PC<br>4350 LA JOLLA VILLAGE DRIVE<br>SUITE 500<br>SAN DIEGO CA 92122 |             |                      | FORMAN, B                         |
|   |             | ART UNIT             | PAPER NUMBER                      |
|   |             | 1655                 | 16                                |
| DATE MAILED:<br>01/10/01  |             |                      |                                   |

Please find below and/or attached an Office communication concerning this application or proceeding.

**Commissioner of Patents and Trademarks**

|                              |                 |              |
|------------------------------|-----------------|--------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s) |
|                              | 09/451,666      | ITO ET AL.   |
| Examiner<br>BJ Forman        | Art Unit        |              |
|                              | 1655            |              |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 22 November 2000.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) 4-15 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-3 and 16-20 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.  
 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved.  
 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.  
 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

#### Attachment(s)

15) Notice of References Cited (PTO-892)  
 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12.  
 18) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
 19) Notice of Informal Patent Application (PTO-152)  
 20) Other:

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**DETAILED ACTION**

1. This action is in response to papers filed 22 November 2000 in Paper No. 15 in which claims 1-3 were amended and claims 16-20 were added. All of the amendments have been thoroughly reviewed and entered. The previous rejections in the Office Action of Paper No. 11 dated 7 July 2000 under 35 U.S.C. 112, second paragraph are withdrawn in view of the amendments. The previous rejections under 35 U.S.C. 102(e) over Takashi et al. are withdrawn in view of the English translation of the Japanese priority application no 341604/1998 submitted in Paper No. 15. The previous rejections under 35 U.S.C. 102(e) over Beattie (U.S. Patent No. 5,843,767) and Winkler et al. (U.S. Patent No. 6,040,193) are maintained. All of the arguments have been thoroughly reviewed and are discussed below. New grounds for rejection are discussed.

Currently claims 1-3 and 16-20 are under prosecution.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Beattie (U.S. Patent No. 5,843,767, filed 10 April 1996). Claims 1-3 are drawn to a biochip comprising probes spotted on a plate at a plurality of positions wherein a binding agent is spotted at the positions where the probes are spotted. For purposes of examination, the claims are

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interpreted as a biochip comprising probes spotted on a plate and the term “spotted” is interpreted as being characterized by the appearance of spots.

Regarding Claim 1, Beattie teaches a biochip comprising probes spotted on a plate at a plurality of positions (Column 5, lines 28-44) wherein a binding agent is spotted is locally spotted at positions where the probes are spotted (Column 6, lines 21-25).

Regarding Claim 2, Beattie teaches the biochip of Claim 1 wherein the plate is a glass (Column 6, lines 21-25).

Regarding Claim 3, Beattie teaches the biochip of Claim 1 wherein the binding agent is silylation-coating i.e. epoxysilane (Column 6, lines 21-25).

#### **Response to Arguments**

4. Applicant argues that the binding agent of Beattie is not locally spotted at positions where probes are spotted, but rather the binding agent is distributed over the entire surface of the glass wafer. This argument is not found persuasive because Beattie specifically teaches localized spotting i.e. a glass substrate is derivatized in confined regions with epoxysilane (Column 4, lines 49-52) to thereby fix oligonucleotides in isolated and discrete regions of a substrate derivatized with epoxysilane (Column 6, lines 21-25).

5. Claims 1-3 rejected under 35 U.S.C. 102(e) as being clearly anticipated by Winkler et al. (U.S. Patent No. 6,040,193, filed 4 August 1998). Claims 1-3 are drawn to a biochip comprising probes spotted on a plate at a plurality of positions wherein a binding agent is spotted at the positions where the probes are spotted. For purposes of examination, the claims are interpreted as a biochip comprising probes spotted on a plate and the term “spotted” is interpreted as being characterized by the appearance of spots.

Regarding Claim 1, Winkler et al. disclose a biochip comprising probes spotted on a plate at a plurality of positions (Column 2, lines 18-34) wherein a binding agent is locally spotted at positions where the probes are spotted (Column 23, lines 9-32) and wherein the

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binding agent is "spotted" by deprotecting the plate at the plurality of positions (Column 23, lines 30-50).

Regarding Claim 2, Winkler et al. disclose the biochip of Claim 1 wherein the plate is glass (Column 23, lines 30-32).

Regarding Claim 3, Winkler et al. disclose the biochip of Claim 1 wherein the binding agent is silylation-coating (Column 23, lines 30-32).

#### **Response to Arguments**

6. Applicant argues that the biochip of Winkler et al. does not have binding agent locally spotted at positions where the probes are spotted, but rather the entire surface of the substrate is derivatized. This argument is not found persuasive because Winkler clearly teaches a binding agent (Column 22, lines 18-24) is locally spotted wherein the preferred embodiment comprises a substrate characterized by the appearance of spots (Column 2, lines 27-34).

#### **New Claims**

7. Claims 16 & 18-20 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Beattie (U.S. Patent No. 5,843,767, filed 10 April 1996).

Regarding Claim 16, Beattie discloses the biochip of Claim 1 wherein the probe comprises DNA (Example 4, Columns 13-14).

Regarding Claim 18, Beattie discloses the biochip of Claim 1 wherein the probe comprises protein (Column 8, lines 55-63).

Regarding Claim 19, Beattie discloses a method for producing the biochip of Claim 1 comprising spotting the mixtures of probes i.e. the oligonucleotides are flowed into the pores (Column 13, line 66-Column 14, line 1) and the binding agent on the plate i.e. the epoxysilane is flowed into the pores (Column 13, lines 55-60).

Regarding Claim 20, Beattie discloses a method for producing the biochip of Claim 1 comprising spotting the binding agent for binding the probes to the plate at positions where the probe are to be spotted i.e. the epoxysilane is flowed into the pores (Column 13, lines 55-60); and spotting the probes on the plate at positions where the binding agent is spotted i.e. the oligonucleotides are flowed into the pores (Column 13, line 66-Column 14, line 1)

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8. Claims 16-20 rejected under 35 U.S.C. 102(e) as being clearly anticipated by Winkler et al. (U.S. Patent No. 6,040,193, filed 4 August 1998).

Regarding Claim 16, Winkler et al. disclose the biochip of Claim 1 wherein the probe comprises DNA (Column 6, lines 26-29).

Regarding Claim 17, Winkler et al. disclose the biochip of Claim 1 wherein the probe comprises RNA (Column 6, lines 26-29).

Regarding Claim 18, Winkler et al. disclose the biochip of Claim 1 wherein the probe comprises protein (Column 5, lines 38-47).

Regarding Claim 19, Winkler et al. disclose a method for producing the biochip of Claim 1 comprising spotting the mixtures of probes (Column 3, lines 29-31) and the binding agent on the plate (Column 3, lines 42-47).

Regarding Claim 20, Winkler et al. disclose a method for producing the biochip of Claim 1 comprising spotting the binding agent for binding the probes to the plate at positions where the probe are to be spotted (Column 3, lines 42-47); and spotting the probes on the plate at positions where the binding agent is spotted (Column 3, lines 29-31).

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Conclusion**

10. No claim is allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878. The examiner can normally be reached on 6:45 TO 4:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (703) 308-1152. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

BJ Forman, Ph.D.  
January 9, 2001



U.S. Patent and Trademark Office